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Janevski

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(54) **GRAPHIC USER INTERFACE HAVING
TOUCH DETECTABILITY**

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(58) **Field of Classification Search** 715/716,
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,524,195 A * 6/1996 Clanton et al. 725/61
5,604,493 A 2/1997 Behlke
5,907,375 A 5/1999 Nishikawa et al.
6,164,853 A 12/2000 Foote

6,198,481 B1 * 3/2001 Urano et al. 715/835
6,211,856 B1 * 4/2001 Choi et al. 345/666
6,368,730 B1 4/2002 Kishimoto et al.
2001/0017615 A1 8/2001 Lin et al.

FOREIGN PATENT DOCUMENTS

DE 19962552 A 7/2001
EP 1047034 A2 10/2000
JP 08076978 3/1996

* cited by examiner

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(57) **ABSTRACT**

A control panel for an electrical/electronic device allows a user to use the control panel without looking at the control panel. The control panel is formed by a graphic user interface (GUI) having a display for displaying various control icons for controlling the device. The display is touch sensitive so that a user is able to select the control function by pressing on the appropriate control icon. The display further has touch detectability for enabling a user to distinguish between the icons by touch. The touch detectability may be in the form of the surface of the display having raised portion in the vicinity of the control icons. While the positioning of the raised portions may be fixed, to allow for changing layouts of the control icons, the display may be flexible and an array of actuators may underlie the display whereby the actuators are selectively activated to press against the underside of the display thereby raising the upper surface of the display in the vicinities of the control icons.

6 Claims, 4 Drawing Sheets

